DEVELOPMENT OF PORTAL FOR PLACES OF WORSHIP AT NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF

THE REQUIREMENT FOR THE DEGREE OF

Bachelor of Technology

In

Computer Science and Engineering

By

Bijendra Behera
Roll No: 108CS017

Department of Computer Science and Engineering
National Institute of Technology Rourkela
Rourkela-769008, Odisha, India

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Under the guidance of
Prof. DURGA PRASAD MOHAPATRA

Department of Computer Science and Engineering
National Institute of Technology Rourkela
Rourkela-769008, Odisha, India

Department of Computer Science and Engineering
National Institute of Technology
Rourkela-769008, India, www.nitrkl.ac.in

CERTIFICATE

This is to certify that the thesis entitled **"Development of Portal for Places of Worship at National Institute of Technology Rourkela"** submitted by Bijendra Behera, in partial fulfillment of the requirements for the award of Degree of Bachelor of Technology in Computer Science and Engineering at National Institute of Technology, Rourkela is an authentic work carried out by them under my supervision and guidance. To the best of my knowledge, the matter embodied in the thesis has not been submitted to any other university / institute for the award of any Degree or Diploma.

Date: Prof. Durga Prasad Mohapatra

Place:

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I owe a great many thanks to a great many people who helped and supported me during my project work.

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Bijendra Behera

Roll No: 108CS017

ABSTRACT

National Institute of Technology, Rourkela is one of the premier institutions for technical education in India which is situated at Sector-2, Rourkela in Orissa covering an area of 262 hectares. The campus of the institute consists of institute buildings, halls of residence, staff colony and places of worship. The main objective of the project is to develop a portal for these places of worship which will he hosted on our institution server. The portal provides a suitable and easy display for which the staffs, students or other people can see and know the functions of these places of worship. Basically how much donation or expenditure (yearly or monthly) to these places of worship is provides on this portal. Also the daily puja timings of the temples and special festivals information are shown on this portal. This portal will be managed by administrator to whom the management committee of these places of worship provides the information which is to be updated on that portal. Using ASP.NET technologies and SQL Server, this portal is designed.

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INTRODUCTION

1. INTRODUCTION

The development of portal for places of worship generally means creating a website in which the management of all functions and activities of temples is done by the administrator where all people (viewers) can view and know all the relevant information about the places of worship which they seek. This project is about the designing and hosting the website for the places of worship which are situated inside the campus of NIT Rourkela. On “Microsoft .NET” platform using “ASP.NET” technologies and “SQL Server”, the website is designed. The portal has basically two user parts where one is user (no authentication required) who can only view and another is administrator (has an authentication) who will manage or control the website. The website consists of basic pages from which the user can navigate to view and know the relevant information like history, puja timing of all temples, information about upcoming festivals, donation and expenditure of all temples, the photos of all temples, and the committee members of temple management and also can give feedback for management these places of worship. In other case, the administrator manages all the relevant actions for which the user can view properly and also make reports of donation, expenditure details of temple. Prior to the design of website for places of worship “System Development Life Cycle” is analyzed and described.

CHAPTER-2

SYSTEM DEVELOPMENT LIFE CYCLE

2. SYSTEM DEVELOPMENT LIFE CYCLE

The Systems Development Life Cycle (SDLC) is a conceptual model used in project management that describes the phases involved in an information system development project, from an initial feasibility study through maintenance of the completed application [1].

Various SDLC methodologies have been developed to guide the processes involved, including the waterfall model (which was the original SDLC method); rapid application development (RAD), joint application development (JAD),the fountain model, the spiral model. Commonly, several models are combined into some sort of hybrid methodology.

In general, an SDLC methodology follows the following phases:

1. The current system is evaluated. Insufficiencies are documented. This can be done by interviewing users of the system and referring with support people.
2. The new system requirements are defined. In particular, the insufficiencies in the present system must be addressed with specific proposals for development.
3. The proposed system is considered. Plans are laid out concerning the physical structure, hardware, operating systems, programming, communications, and security issues.
4. The new system is developed. The new components and programs must be acquired and installed. Users of the system must be expert in its use, and all aspects of performance must be verified. If necessary, adjustments must be made at this stage.
5. The system is turned into use. This can be done in several ways. The new system can put in, according to application or location, and the old system gradually substituted. In some cases,

it may be more cost-effective to remove the old system and implement the new system all at once.

6. Once the new system is ready and running for a while, it should be exhaustively estimated. Maintenance must be kept up thoroughly at all times. Users of the system must be kept up-to-date concerning the latest changes and procedures and techniques..

Graphically the various phases of SDLC can be represented as:

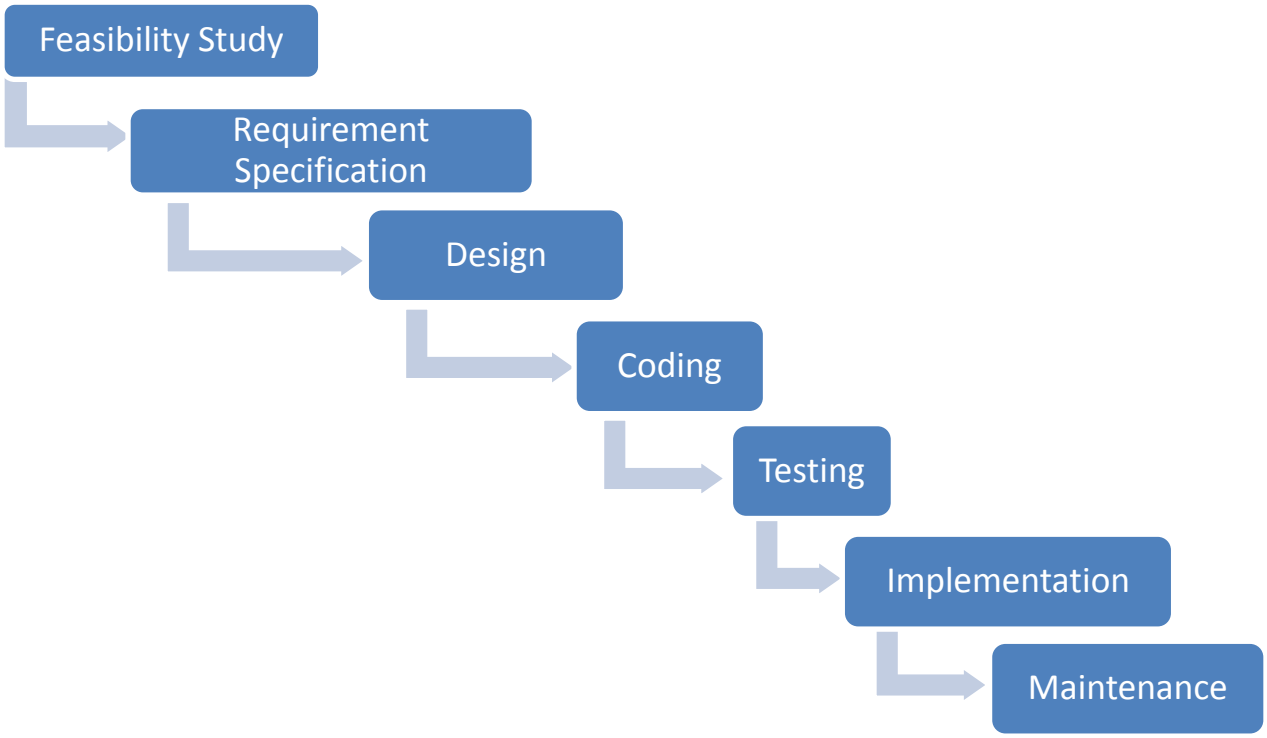


FIGURE 1 SYSTEM DEVELOPMENT LIFE CYCLE (SDLC)

In this project, we will go through all the phases of System Development Life Cycle to develop our required portal for places of worship at National Institute of Technology, Rourkela.

2.1 FEASIBILITY STUDY

A place of worship is an establishment where a group of people comes to perform act of religious study, honor, or devotion. The term" Temple" is used as general term for any place of worship (in Hinduism).At National Institute of Technology, Rourkela campus, there are four places of worships which are Shiv Temple, Ram Temple, Hanuman Temple and Mangala Temple. Basically the staffs and students of this institute come and worship in these temples as these are confined to institute campus. In these respective temples, there is a "Pundit" who does the required puja every day. Every year, the important festivals are celebrated in these temples. In each temple there is donation box where people can donate on their will. Besides these temple's festivals, there are also other festivals which is celebrated inside the campus that are Durga Puja, Karthik Purnima, and Asta Prahari etc.

There is a committee who controls the financial economy of these temples and festivals that is how much donation and expenditure comes to or from these temples. End of every year, the finance is audited and the closing balance is saved in Institute treasure (State bank of India).But this financial calculation is done by manually by an authorized committee member.

This is the feasibility study of the system "Places of Worship" at NIT Rourkela. This is the initial phase from which we found the abstract of the functions and activities of the system .Next, we are going to the next phase of SDLC i.e. Requirement Specification in which all the requirements of this system are analyzed and a document is prepared for getting the goal of this project.

2.2 REQUIREMENT SPECIFICATION

In this phase, mainly a SRS document of the required system is prepared. SRS document is the Software Requirements Specifications document in which the goals of implementation functional requirements, non-functional requirements and Environmental Characteristics are discussed.

1. Goals of Implementation:

The implementation of the system provides a portal which will also provide an easy and good looking user interface for which the end user can view and search the required information from the system.

In our case, the end user can know the temple history, the puja timings of temples, the special events of the temples, the festivals details, the committee member's details of places of worship, the donation and expenditure of the temples per year or can search as per their date interval. End users can also give feedback for these temples. And for the administrator, he will be given the power to manage the activities or functions displayed in the portal.

2. Functional Requirements:

For documenting the functional requirements, the set of functionalities supported by the system are to be specified. A function can be specified by identifying the state at which the data is to be input to the system, its input data domain, the output data domain, and the type of processing to be carried on the input data to obtain the output data.

In our system, basically the management parts are the functional requirements which are donation and expenditure.

For administrator, he inputs the donation details (Receipt no, donor name, date of donation, for which purpose, amount etc.) and for the end user, he can view the details of donation and can search the donation detail by inputting the date interval or by inputting the purpose for which the donation is given.

Like donation, in expenditure, the administrator inputs the expenditure details (Voucher no, date of expenditure, for which purpose expenditure is done, amount of expenditure) and the end user van view the details of the expenditure and can search the expenditure details by inputting the date interval or by inputting the purpose for which the expenditure is done.

In both donation and expenditure, the administrator makes a report of both and gives to the committee where these data are audited and required action is taken.

User also can give feedback for these places of worship or the system by inputting his or her name, address, email and what message he or she wants to give. And the administrator keeps a report of this feedback and required action is taken.

3. Non-functional Requirements:

These are the requirements that are not functional in nature. Especially these are the constraints the system must work within.

- **Performance Requirements:** The system response time must be less than 10 seconds for the user interface. The system must processes the number of transaction based on the following calculation method.
- **Reliability Requirements:** The system shall have a minimum uptime of 99 % excluding time pre-scheduled for maintenance and/or upgrades.

- **Safety Requirements:** All system data must be backed up every 24 hours and the backup copies stored in another server at different building or location for disaster recovery.
- **Security Requirements:** All access permission for the system data may only be changed by the system's administrator.
- **Quality Attributes:** The source codes for the system is well documented for ease of maintenance and upgrading the system in future.

4. Environmental Characteristics:

This subsection of the SRS Document describes the properties of the environment with which the system will interact. The system is interacted in 3-tier architecture.

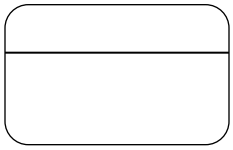
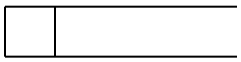
Hardware Specification	Software Specification
Processor: Intel Core 2 Duo(32 bit) **RAM:** 3 GB **Hard Disk:**80GB	**Database Server:** Microsoft SQL Server 2005(32 bit) express with service pack 3 **Application Server or Web Server:** Microsoft .NET Framework 3.5 Service Pack 1 **Client Computer:** A supported Browser(Internet Explorer, Chrome or Firefox)

2.3 DESIGN

Design phase deals with transforming the requirements, as described in the SRS document, into a form that is implemented using a programming language. The various designs of this system are shown as following:

1. Data Flow Diagram:

Data Flow diagram is the graphical representation of flow of data throughout the information system. Data flow diagrams illustrate how data is processed by a system in terms of inputs and outputs.

Name	**Notation**	**Role**
Process		Transforms incoming data flow to output data flow
DataStore		Repositories of data in the system.
Dataflow		Dataflow are pipelines through which packets of information flow.
External Entity		External entities are objects outside the system, with which the system communicates

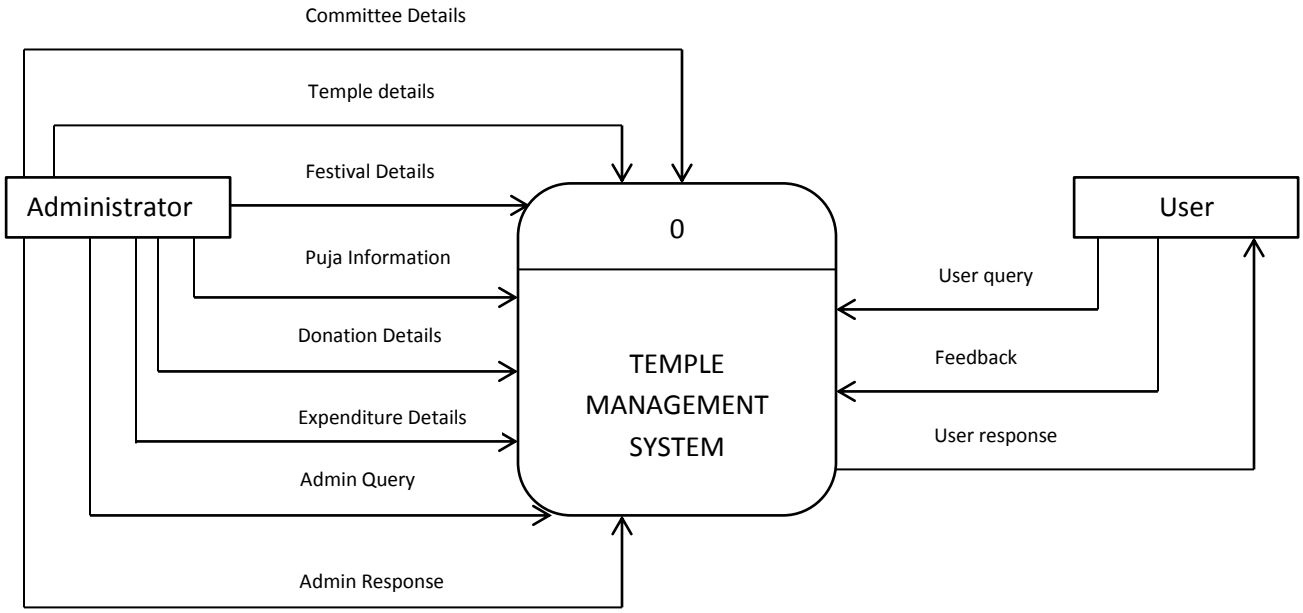


FIGURE 2 CONTEXT DIAGRAM

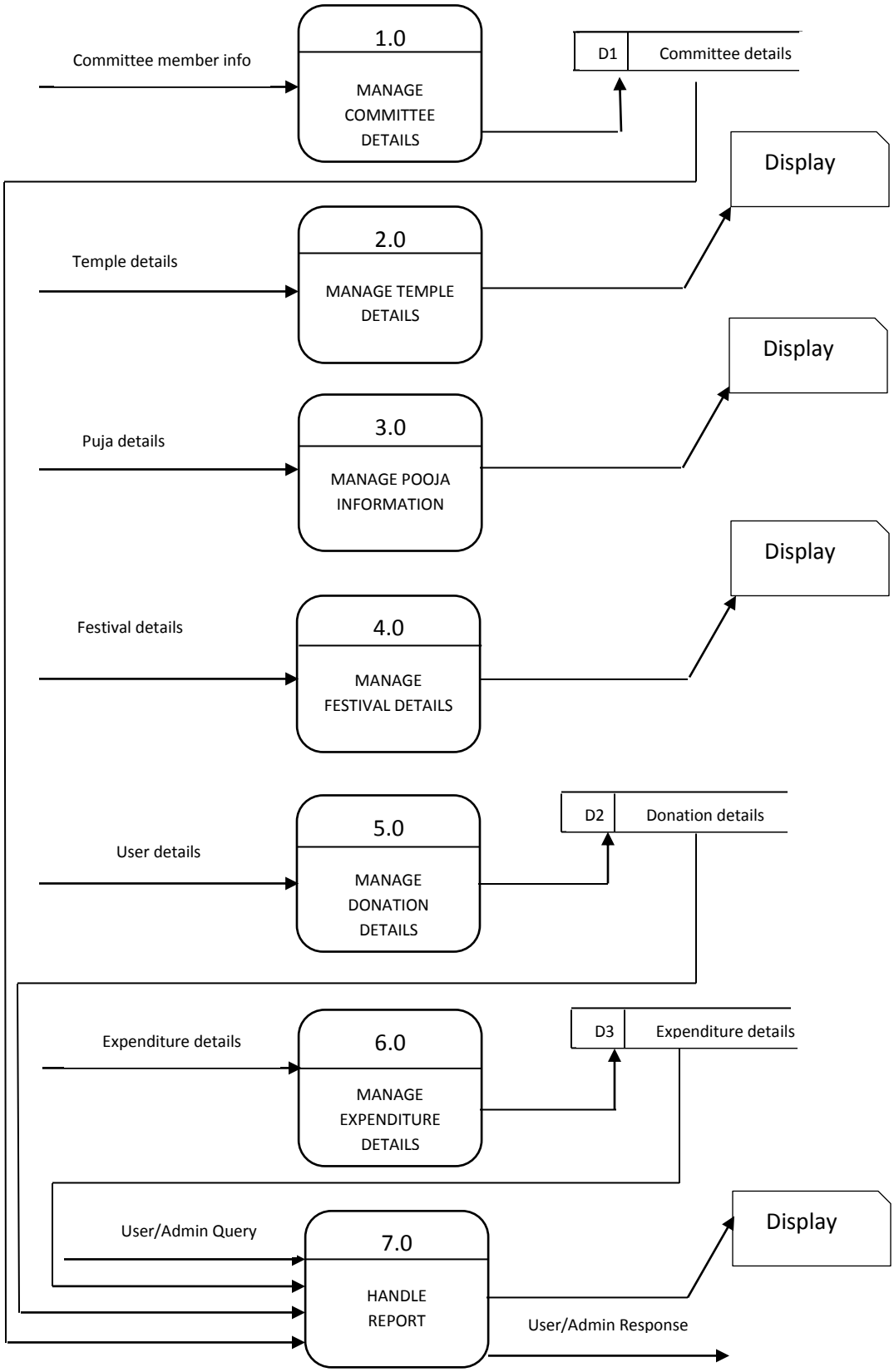


FIGURE 3 LEVEL 1

Data Dictionary:

Committee Details :{ Member Name + Department+ Email+ Mobile No}

Temple Details :{ Temple Name+ Location+ Timing+ History}

Festival Details: {Festival Name+ Date+ Description}

Donation Details :{ Receipt No+ Donor Name + Department+ Email+ Mobile No+ Purpose + Amount}

Expenditure Details :{ Voucher No+ Date + Purpose + Description + Amount}

Feedback :{ Name+ Address+ Email+ Message}

Query :{ Donation +Expenditure + Upcoming News}

2. Entity Relationship Diagram:

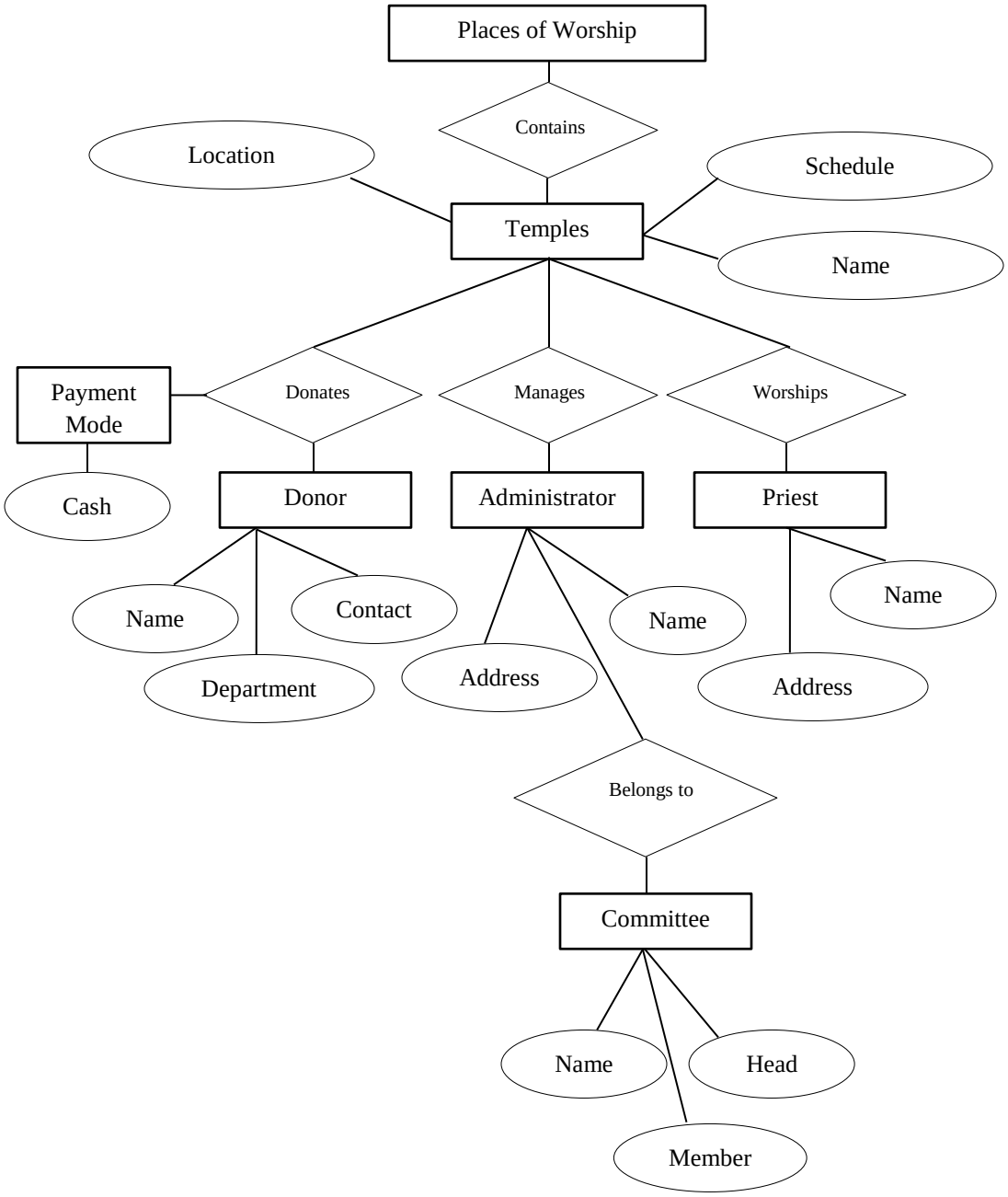


FIGURE 4 ER DIAGRAM

2.4 CODING

The goal of the coding phase is to translate the design of the system into code in a given programming language. For a given design, the objective of this phase is to implement the design in best possible method. The coding phase affects both testing and maintenance overwhelmingly. A well written code lessens the testing and maintenance effort. Since the testing and maintenance cost value of software are much higher than the coding cost, the goal of coding should be to lessen the testing and maintenance effort. Hence, during coding the emphasis must be on developing programs which are easy to write. Simplicity and clarity should be get, during the coding phase [1].

A main concept that helps the understandability of programs is structured programming. The goal of structured programming is to organize the control flow in the program. That is, program text should be ordered as a sequence of statements, and during execution, the statements are executed in the sequentially order in the program.

In this Project, basically the *HTML*, *CSS*, *JavaScript*, *C#* codes are used.

Hypertext Markup Language (HTML) is the main markup language for displaying web pages and other information that can be displayed in a web browser. *Cascading Style Sheets (CSS)* is a style sheet language used for describing the presentation semantics (the look and formatting) of a document written in a markup language. *JavaScript (sometimes abbreviated JS)* is a prototype-based scripting language that is dynamic, weakly typed and has first-class functions. *C#* is a multi-paradigm programming language encompassing strong typing, imperative, declarative, functional, generic, object-oriented(class-based), and component-oriented programming disciplines.

2.5 TESTING

Before actually implementing the new system into operation, a test run of the system is done for eliminating the bugs, if any. It is a significant phase of a successful system. After writing codes, the whole programs of the system, a test plan should be developed and run one given set of test data. The output of the test run must match the probable results. Occasionally, system testing is measured a part of implementation process [1].

Using the test data subsequent test run are carried out:

Program test: After the programs have been coded, compiled and carried out to working conditions, they must be independently tested with the prepared test data. Any unwanted happening should be noted and debugged (error corrections).

System Test: After writing the program test for each of the programs of the system and errors removed, and then system test is complete. During this stage the test is done on actual data. The complete system is put into execution on the actual data. At every stage of the execution, the output of the system is studied. During the outcome analysis, it may be found that the outputs are not matching the estimated output of the system. In such situation, the bugs or errors in the particular programs are recognized and are fixed and further verified for the expected output.

When it is confirmed that the system is running error-free, the users are called with their own real data so that the system could be presented running as per their requirements.

2.5 IMPLEMENTATION

Implementation is another phase of a project during which theory is put into practice. The major steps in-evolved in this phase are:

- Acquisition and Installation of Hardware and Software
- Conversion
- User Training
- Documentation

The hardware and the relevant software required for debugging the system should be made fully operative before implementation. The translation is also one of the most critical and costly activities in the system development life cycle. The data from the old system should be converted to run in the new format of the new system. The database needs to be configured with security and recovery procedures need to be fully defined [1].

During this phase, all the programs of the system are loaded onto the user's computer systems. After loading the system, training of the user begins. Essential topics of such type of training are:

- How to execute the package
- How to pass the data
- How to process the data (processing details)
- How to take out the reports

After the users are trained about the computerized system, working has to change from manual to computerized working. The process is called 'Changeover'. The following strategies are described for changeover of the system.

(i) Direct Changeover: The new system is completely replaced on the old system. It is a uncertain approach and needs complete system testing and training.

(ii) Parallel run: Both the systems, i.e., computerized and manual, are implemented simultaneously for some defined period. The same information is processed by both the systems. This strategy is less risky but more costly because of the following:

- Manual results can be compared with the results of the computerized system.
- The operational work can be doubled.

Failure of the computerized system at the early stage does not change the working of the organization, because the manual system goes on, as it used to do.

(iii) Pilot run: In pilot run, the new system is put into run with the data or information from one or more of the preceding periods for the whole or part of the system. The outcomes are compared with the old system results. It is less costly and risky than parallel run approach. This strategy builds the confidence and the errors are found easily without affecting the operations.

The documentation of the system is also one of the main activities in the system development life cycle. This ensures the stability and continuity of the system. There are basically 2 types of documentation. These are: User or Operator Documentation and System Documentation

The user documentation is a complete explanation of the system from the user's point of view how to use or operate the system. It also contains the major error messages likely to be run into by the users. The system documentation comprises the details of system design, programs, coding, system flow, data dictionary, process description, etc. This helps to realize the system and permit changes to be made in the existing system to fulfill new user needs.

2.5 MAINTENANCE

Maintenance is essentially needed to remove errors in the system during its functioning life and to adjust the system to any variations in its working surroundings. It has been observed that there are always some errors found in the systems that must be identified and corrected. It also means the review of the system from period to period [1]. The review of the system is done for the following needs:

- Knowing the full capabilities of the system
- Knowing the required changes or the additional requirements
- Studying the performance.

If any major change to a system is required, a new project may have to be configured to carry out the change. The new project will then continue through all the system development life cycle phases.

CHAPTER-3

TECHNOLOGIES USED

3. TECHNOLOGIES USED

3.1 ASP.NET TECHNOLOGIES

ASP.NET is a Web platform that provides all the services that developers require to construct enterprise-class server-based Web applications. ASP.NET is developed on the .NET Framework, so that all .NET Framework features are obtainable to ASP.NET applications. All web applications can be written in any language that is well-suited with the common language runtime (CLR), including Visual Basic and C# [2].

To create ASP.NET Web applications, Visual Studio is used. The tools and options in Visual Studio are designed for creating Web applications which are referred to collectively as Visual Web Developer. In addition to this, a free standalone product—Visual Web Developer Express—is available that comprises the core set of Web-design features from Visual Studio [2].

ASP.NET 3.5 provides a link to topics that define the version of ASP.NET that is fragment of the .NET Framework 3.5 and that describe how to create Web applications with the help of Visual Studio 2008 and Visual Web Developer 2008 Express Edition.

In this project, Microsoft Visual Studio 2008 along with .NET Frame work 3.5 is used to create the required web applications. The language used for creating web application is C#(C sharp).

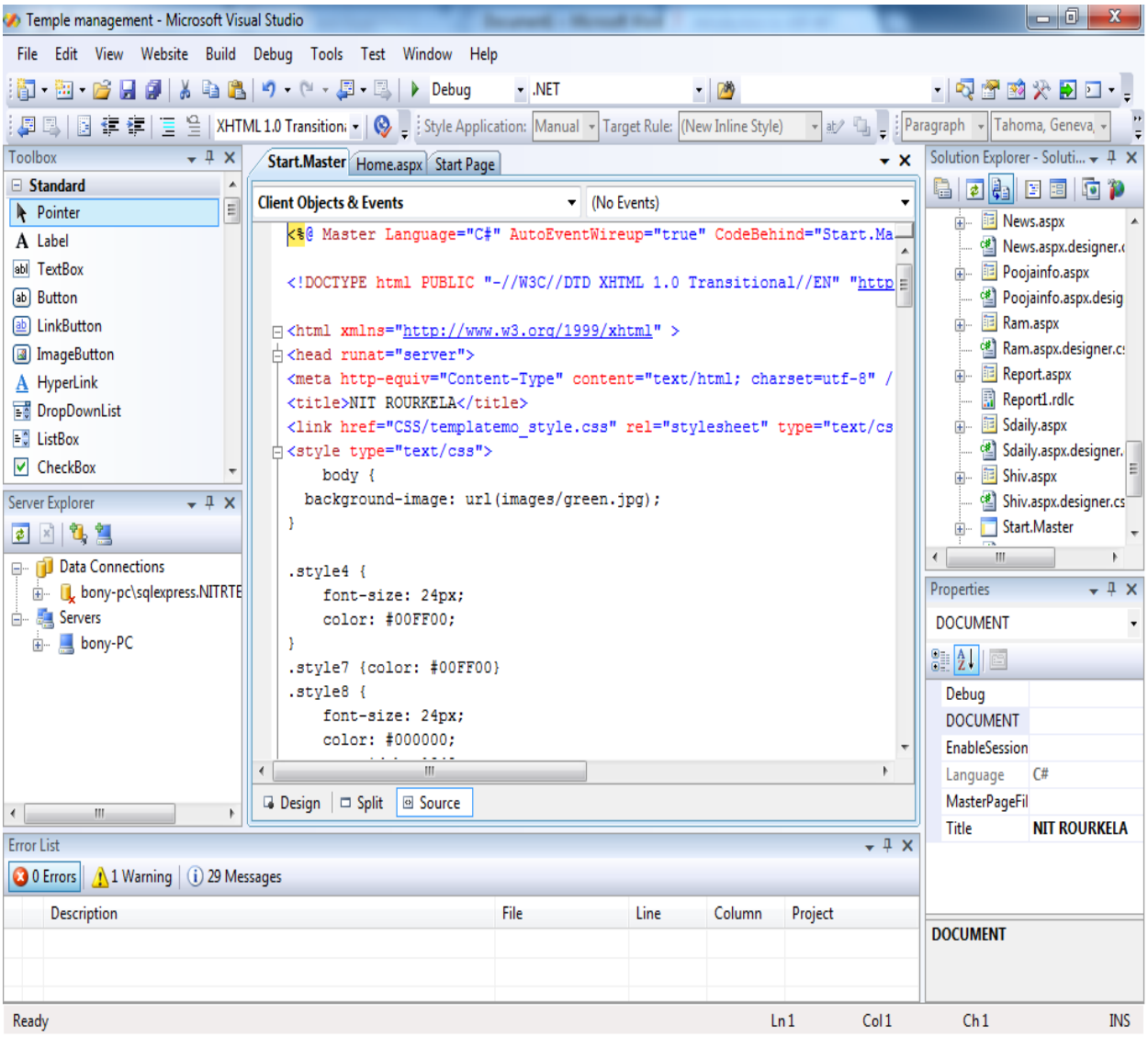


FIGURE 5 MICROSOFT VISUAL STUDIO 2008

3.2 SQL SERVER

Microsoft SQL Server is a relational database management system developed by Microsoft. SQL Server Express is a cost free and easy-to-use database product that is based on SQL Server 2005 technology. It is designed to deliver a database platform that offers superior ease of use, enabling

fast deployments for its objectives. The ease of use begins with a simple and robust graphical user interface (GUI) that guides the user throughout the installation process. The GUI tools that emanate for free with SQL Server Express which includes SQL Server Management Studio Express Edition, Surface Area Configuration Tool and SQL Server Configuration Manager. These tools abridge the basic database operations. The design and development of database applications are made easier by the integration with Visual Studio projects [3].

In this Project, SQL Server 2005 (Express) is used for database operations and integrated with the Microsoft visual studio 2008.Here SQL Server Management Studio Express is the GUI tool.

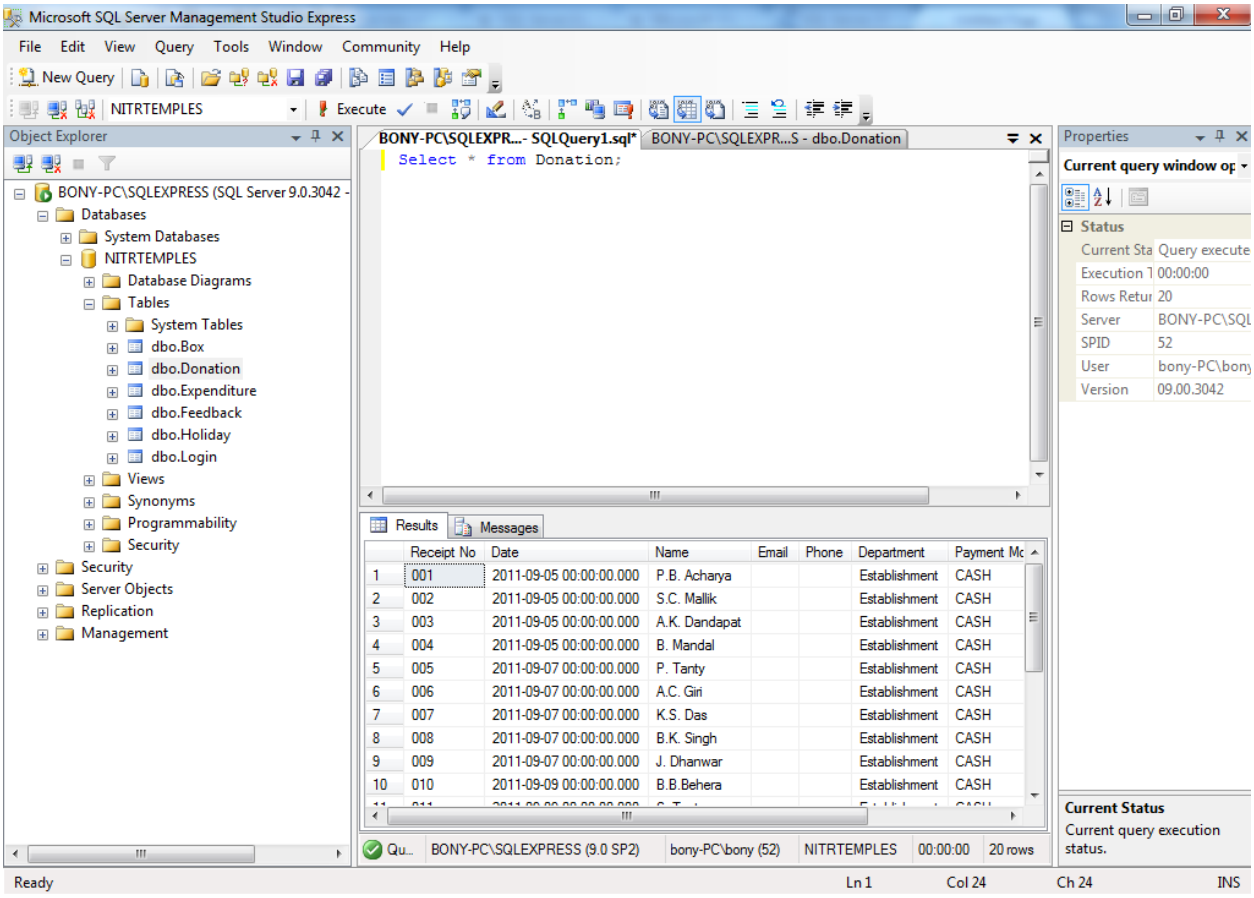


FIGURE 6 MICROSOFT SQL SERVER MANAGEMENT STUDIO EXPRESS

CHAPTER-4

RESULTS AND SCREENSHOTS

4. RESULTS AND SCREEN SHOTS

After going through all the phases of System Development Life Cycle, the portal is designed successfully. The below figures are the screenshots of that portal given as:

Home Page:

FIGURE 7 HOME PAGE

Donation Form Page:

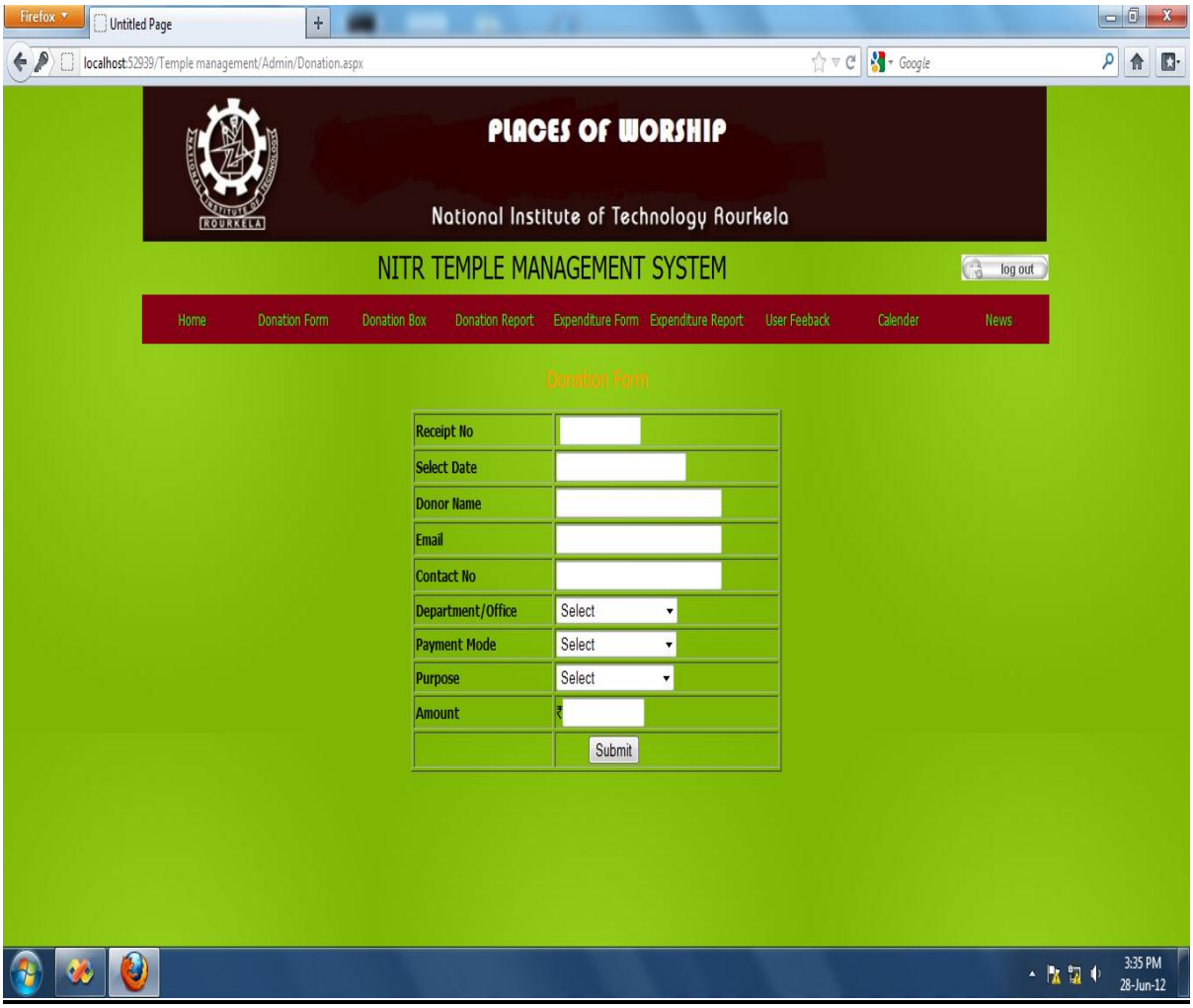


FIGURE 8 DONATION FORM PAGE

Expenditure Form Page:

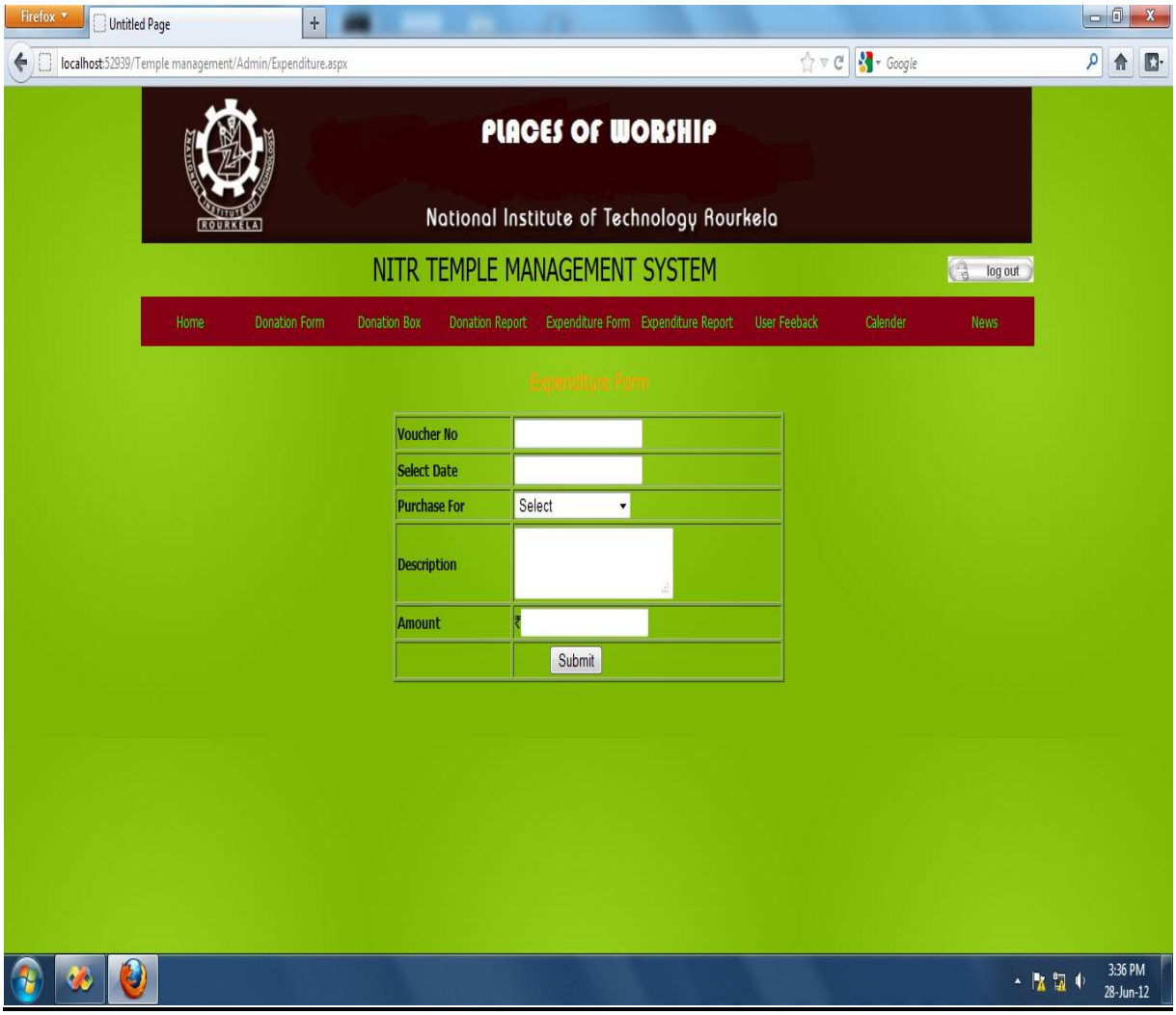


FIGURE 9 EXPENDITURE FORM PAGE

Donation Details Page:

FIGURE 10 DONATION DETAILS PAGE

Expenditure Details Page:

FIGURE 11 EXPENDITURE DETAILS PAGE

Photo Gallery Page:

FIGURE 12 PHOTO GALLERY PAGE

Committee Member details Page:

FIGURE 13 COMMITTEE MEMBER DETAILS PAGE

Feedback Form Page:

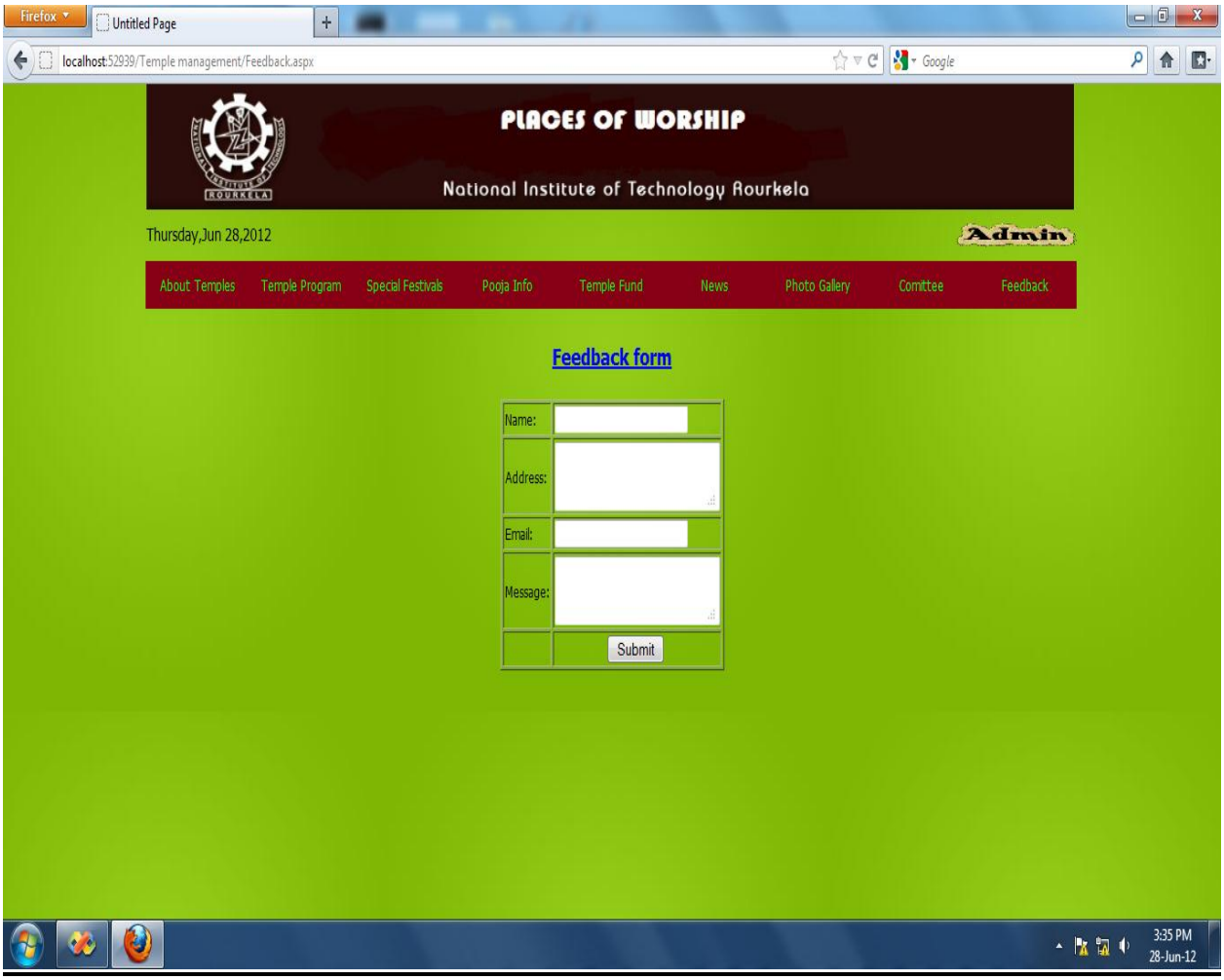


FIGURE 14 FEEDBACK FORM PAGE

CHAPTER-5

CONCLUSION

5. CONCLUSION

After processing through all phases of the system development life cycle, the portal is developed. In future it will be hosted on the internet server which will accessed by all people in the world and can view the site and know all the information about places of worship at National Institute of Technology Rourkela. Also people can ask the query for any management related questions or give feedback if any changes to be made for this site. The Administrator who will be assigned by the committee of the places of worship will be given the secure login information and will change or modify the website as per the requirements decided by the committee.

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